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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/882,290	06/14/2001	Masahiro Ishida	KPO127	6869
25271	7590	08/31/2005	EXAMINER	
GALLAGHER & LATHROP, A PROFESSIONAL CORPORATION 601 CALIFORNIA ST SUITE 1111 SAN FRANCISCO, CA 94108			VLAHOS, SOPHIA	
			ART UNIT	PAPER NUMBER
			2637	

DATE MAILED: 08/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

JK

Office Action Summary	Application No. 09/882,290	Applicant(s) ISHIDA ET AL.	
	Examiner SOPHIA VLAHOS	Art Unit 2637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 June 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 10-14, 17-21 and 26-30 is/are rejected.
- 7) ☒ Claim(s) 7-9, 15, 16, 22-25 and 31 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 6/14/2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/16/2002</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. Figures 1-7B should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Information Disclosure Statement

The information disclosure statement filed 12/16/2002 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 2637

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wong et. al, (U.S. 6,208,169) in view of Kuyel (U.S. 2002/0103609) :

Regarding claim 1, Wong et. al., disclose a phase error estimator for obtaining phase errors (Fig. 1A, element 16) between the approximated zero-crossing points and the corresponding zero-crossing points of the signal under measurement, and for outputting a zero crossing phase error data sequence. Wong et. al, also disclose a period jitter estimator for obtaining a period jitter sequence of the signal under measurement from the phase error data sequence (column 2, lines 30-40).

Wong et. al. fail to teach obtaining sampling points close to corresponding zero-crossing points of the signal under measurement as approximated zero-crossing points.

In the same field of endeavor, however, Kuyel discloses obtaining sampling points close to corresponding zero-crossing points of the signal under measurement as approximated zero-crossing points ([0028], lines 1-5, [0041], lines 7-9, Fig. 5A, elements 406, 410).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Wong et. al., by Kuyel for the benefit of reducing testing costs (Kuyel, [0014], lines 10-16).

Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wong et. al, (U.S. 6,208,169) in view of Kuyel (U.S. 2002/0103609) and Godard (U.S. 4,654,861).

All the limitations of claim 2, are analyzed in claim 1, except for further comprising band-pass filter means provided at front stage of said phase error estimator to which the signal under measurement is inputted for passing therethrough predetermined frequency components of the signal under measurement, and for supplying the predetermined frequency components to said phase error estimator.

In the same field of endeavor, however, Godard discloses band-pass filter means (Fig.1 element 14, column 3, lines 26-29) to which the signal under measurement is inputted for passing therethrough predetermined frequency components of the signal under measurement, and for supplying the predetermined frequency components to said phase error estimator.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify Wong et. al, by incorporating Godard's band pass filter at front stage of said phase error estimator for the benefit of input signal quality (Godard, column 3, lines 26-29).

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wong et.

al, (U.S. 6,208,169) in view of Kuyel (U.S. 2002/0103609) , and further in view of Godard (U.S. 4,654,861) and Soo (Pericom, Application Brief AB36, Jitter Measurement Techniques).

All the limitations of claim 3, are analyzed in claim 2, except for further comprising a cycle-to-cycle period jitter estimator to which the period jitter sequence is inputted for calculating its difference sequence, and for outputting a cycle-to-cycle period jitter sequence.

In the same field of endeavor, however, Soo discloses the above limitation (Figures 1 and 3)

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Wong et. al., by Soo for the benefit of quality (Soo, 3rd paragraph Jitter Measurement Techniques)

Claims 4, 11, 12, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wong et. al., (U.S. 6,208,169) in view of Kuyel (U.S. 2002/0103609) , Godard (U.S. 4,654,861), and Tabatabaei et. al., (U.S. 2003/0076181).

With respect to claim 4, all the limitations of claim 4, are analyzed in claim 2, except for further comprising a jitter detector to which the jitter sequence is inputted for obtaining a jitter value of the signal under measurement from the jitter sequence.

In the same field of endeavor, however, Tabatabaei et. al disclose a jitter detector to which the jitter sequence is inputted for obtaining a jitter value of the signal under measurement from the jitter sequence ([0007]-[0009]).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Wong et. al. by Tabatabaei et. al for the benefit of quality control.

With respect to claim 11, all the limitations of claim 11, are analyzed in claim 4, and and Godard discloses a jitter detector is a peak-to-peak detector (column 5, lines 51-56, Fig.1, item 42) for obtaining a difference between the maximum value and the minimum value of a supplied jitter sequence.

With respect to claim 12, all the limitations of claim 12 are analyzed in claim 4, and Tabatabaei et. al disclose a jitter detector is an RMS detector for obtaining a root-mean-square value (RMS value) of a supplied jitter sequence ([0007]-[0009]).

With respect to claim 13, all the limitations of claim 13 are analyzed in claim 4, and Wong et. al., disclose a jitter detector is a histogram estimator for obtaining a histogram of a supplied jitter sequence (column 4, lines 39-43).

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wong et. al, (U.S. 6,208,169) in view of Kuyel (U.S. 2002/0103609) and Godard (U.S. 4,654,861).

All the limitations of claim 5, are analyzed in claim 2, and Wong et. al., disclose a phase error estimator comprising: a phase error calculator (Fig. 1A, element 16) to which the approximated zero-crossing data sequence is inputted for calculating the phase errors (column 2, lines 30-34) between the approximated zero-crossing points and the corresponding zero-crossing points of the signal under measurement and the approximated zero-crossing data, and for outputting the zero-crossing phase error data sequence (column 2, lines 30-34). Kuyel discloses a zero-crossing sampler to which the signal under measurement that has passed through said band-pass filter means is inputted for sampling only waveform data around zero-crossing timings (Fig. 5A) of the inputted signal, and for outputting an approximated zero-crossing data sequence (Fig. 5A).

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wong et. al, (U.S. 6,208,169) in view of Kuyel (U.S. 2002/0103609) and Godard (U.S. 4,654,861).

All the limitations of claim 6, are analyzed in claim 5, except for an analytic signal transformer to which the signal under measurement that has passed through said band-pass filter means is inputted for transforming the inputted signal under

measurement into a complex analytic signal, and for supplying the complex analytic signal to said zero-crossing sampler.

In the same field of endeavor, Godard discloses an analytic signal transformer (Fig. 1 , item 20) to which the signal under measurement is inputted for transforming the inputted signal under measurement into a complex analytic signal (column 4, 50-52).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Wong et. al., by incorporating Godard's analytic signal transformer for the benefit of signal manipulation ease.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wong et. al, (U.S. 6,208,169) in view of Kuyel (U.S. 2002/0103609), Godard (U.S. 4,654,861), and Kleck et. al. (U.S. 2002/0176491).

All the limitations of claim 10 are analyzed in claim 2, except for further comprising a waveform clipper to which the signal under measurement is inputted for removing amplitude modulation components of the signal under measurement in the state that phase modulation components of the signal under measurement are retained.

In the same field of endeavor, however, Kleck et. al., discloses a waveform clipper ([0018] , lines 1-8) to which the signal under measurement is inputted for removing amplitude modulation components ([0017]) of the signal under

measurement in the state that phase modulation components of the signal under measurement are retained ([0017]).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify Wong et. al., by Kleck's AM removal stage for the benefit of signal quality.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wong et. al, (U.S. 6,208,169) in view of Kuyel (U.S. 2002/0103609) Godard (U.S. 4,654,861), as applied to claim 2, and Tabatabaei et. al., (U.S. 2003/0076181).

All the limitations of claim 14, are analyzed above in claim 2, except for further comprising a fundamental period estimator to which the signal under measurement is inputted for obtaining a fundamental period of the signal under measurement.

In the same field of endeavor, however, Tabatabaei et. al., disclose a fundamental period estimator [0008] to which the signal under measurement is inputted for obtaining a fundamental period of the signal under measurement [0007]-[0009].

At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify Wong et. al., by Tabatabaei et. al for the benefit of quality control.

With respect to claims 17, 18, 19, 20, 21, 26, 27, 28, 29, 30 the steps claimed as method are restating the function of the specific components of the apparatus claimed above in claims 2, 3, 4, 5, 6, 10, 14, 11, 12, 13 respectively and would have been obvious, considering the aforementioned rejection of apparatus claims 2, 3, 4, 5, 6, 10, 14, 11, 12, 13 respectively.

Allowable Subject Matter

4. Claims 7-9, 15-16, 22-25, 31 would be allowable if rewritten to include all of the limitations of the base claim and any intervening claims.

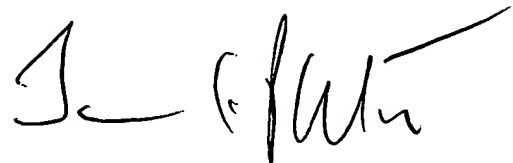
Any inquiry concerning this communication or earlier communications from the examiner should be directed to SOPHIA VLAHOS whose telephone number is 571 272 5507. The examiner can normally be reached on MTWRF 8:30-17:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JAY PATEL can be reached on 571 272 2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2637

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

8/26/2005
SV

A handwritten signature in black ink, appearing to read "Jay K. Patel", with a long horizontal stroke extending to the right.

JAY K. PATEL
SUPERVISORY PATENT EXAMINER